

C 44430

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Name.....

Reg. No.....

**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2013**

EC 09 L25—BIOMEDICAL INSTRUMENTATION

(2009 Scheme – Supplementary)

Time : Three Hours

Maximum : 70 Marks

Part A

1. What are the four main factors involved in the movement of ions across the cell membrane in the steady-state condition ?
2. List the advantages of indirect method of measurement of blood pressure.
3. What is meant by ventilators ?
4. What is meant by threshold of perception ?
5. Mention the significance of ECG.

(5 × 2 = 10 marks)

Part B

6. Explain action potential and propagation of action potential.
7. Sketch the EEG electrode placement with its name.
8. Write notes on spirometer.
9. What is meant by ventilators ?
10. List the therapeutic applications of laser.
11. Write notes on electrical safety analyzers.

(4 × 5 = 20 marks)

Part C

12. (a) Write notes on polarisable and non-polarisable electrodes.

Or

- (b) Explain the working of electroencephalogram.

- 13 (a) Describe ultrasonic blood flow meters.

Or

- (b) Describe the various lung volumes and capacities and explain the various techniques used in lung volume measurements.

Turn over

14. (a) Describe cardiac pacemakers.

Or

(b) Explain the operation of hemodialysis system.

15. (a) Discuss about the macro-shock hazards.

Or

(b) Write about the measurement of pH and pCO₂.

(4 × 10 = 40 marks)